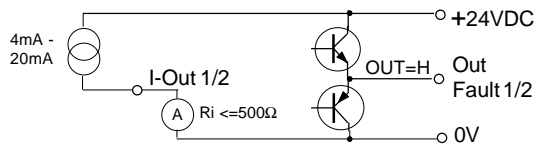
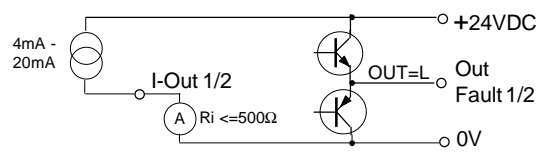
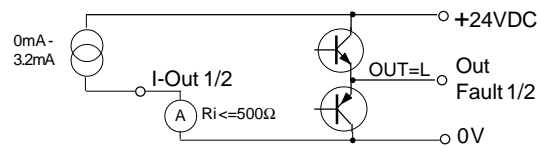


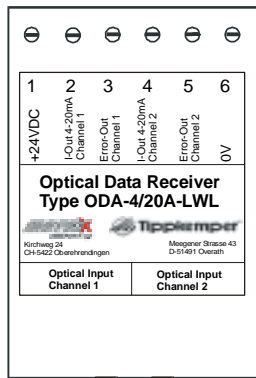
Data Processing Receiver for pressure sensors with current output 4 - 20mA, PNP type Type ODA-4/20A-LWL S131

- For data processing in composition with pressure or temperature sensors over POF
- Contains 2 independent receivers
- Simple connection of synthetic fibre optics (POF) without special tools
- Short response time and very high sensitivity
- 2 x Current outputs 4mA-20mA and 2 x Fault indication outputs



Technical Data	Type	ODA-4/20A-LWL S131
Number of receivers		2
Minimum pulse width at the inputs		$\geq 2\mu\text{s}$
Minimum optical input power		$\geq 0.2\mu\text{W}$ (POF, L:10m, D:1mm; pulse width $\geq 2\mu\text{s}$)
Response time, current outputs		$\leq 5.5\text{ms}$
Response time, fault indication outputs		100ms
Supply voltage		20VDC to 28VDC
Current consumption		100mA (without output currents)
Maximum power dissipation		4.1W
Analog current outputs		2 x PNP-current outputs, 4mA to 20mA
Tolerance current output signal		+2.5% at 4mA, +2% at 20mA
Ripple on the output current		$< 2\%$
Temperature drift		-2.85 $\mu\text{A/K}$ (bei 10mA)
External load resistance		RL: 0Ω to 500Ω
Fault indication outputs		2 x Push-Pull, short circuit protected, maximum 20mA
Internal resistance, fault indication output		Ri: maximum 150Ω
Recommended output load, fault indication output		RL: 1500Ω to $10\text{k}\Omega$
Inputs		2 x Optical for synthetic fibre optics, 2.2mm, core 1mm
Housing		Synthetic (Makrolon / Polystyrene)
Enclosure rating, at EN 60529		IP20
Mounting		On DIN rail at EN 50022 or with 2 screws
Ambient working temperature T_{Amb}		$-20^{\circ}\text{C} < T_{\text{Amb}} < +50^{\circ}\text{C}$
Electrical connection		Terminal screws, 1/4-36UNS-2B
Applicable POF's		Outside diameter: 2.2mm / Core diameter: 1mm
POF length		Dependent on type and structure of the used POF
Optical input connection		POF-connection for PHOENIX Q-FSMA connectors (Phoenix Article-No.: 18 85 99 4)
Accessories (not included)		- POF, single or multiple fibre, D2.2mm/1mm - Q-FSMA POF-connector
Options		- ODA-4/20A-LWL: Fault indication outputs LOW when battery OK.
Function OK: Frequency 400Hz to 2000Hz (363Hz to 2020Hz) equivalent to pressure Battery OK: - Current out, nominal: 4mA - 20mA - Current, max. range: 3.63mA - 20.2mA - Fault out: HIGH		Current out 1 or 2 = 4mA-20mA Fault out 1 or 2 = +24V 
Function OK but battery low: Frequency 400Hz to 2000Hz (363Hz to 2020Hz) equivalent to pressure Battery discharged: - Current out, nominal: 4mA - 20mA - Current, max. range: 3.63mA - 20.2mA - Fault out: LOW		Current out 1 or 2 = 4mA-20mA Fault out 1 or 2 = 0V 
Malfunction: Negative pressure (frequency $< 363\text{Hz}$), no optical input signal, longer then 55ms, no fibre optic connected, or input frequency $> 5000\text{Hz}$: - Current out: $\leq 3.2\text{mA}$ - Fault out: LOW		Current out 1 or 2 $< 3.2\text{mA}$ Fault out 1 or 2 = 0V 

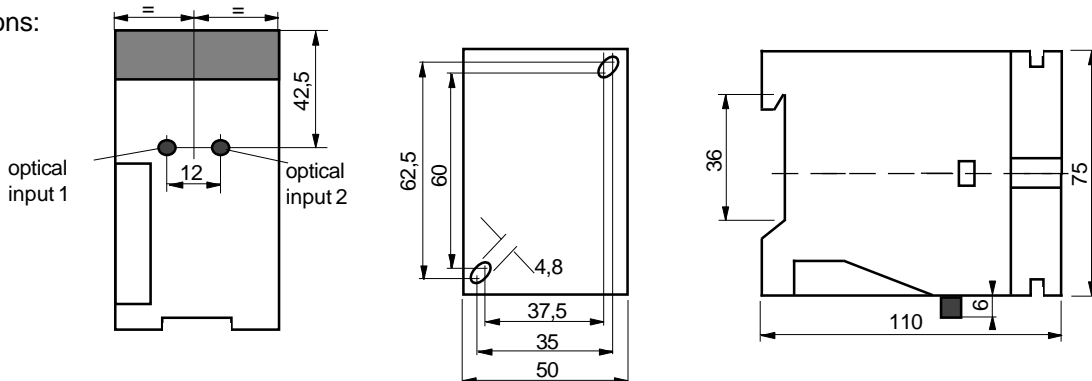
Dimensions ODA-4/20A-LWL S131:



- 1 +24VDC
- 2 Current output 1, 4-20mA
- 3 Fault output 1
- 4 Current output 2, 4-20mA
- 5 Fault output 2
- 6 0V

Optical input channel 1 Optical input channel 2

Dimensions:



Operating Manual / EC - Declaration of Conformity:

General mounting prescriptions:

Do not exceed the maximum ratings. The electrical connections must be exactly as shown in the connection diagram. For highest noise immunity use twisted pair cables with shielding. The cable shield should be connected to the protection earth, large-surfaced. Connection cables must not be installed parallel to high voltage cables.

Function

The optical data processing unit type ODA-4/20A-LWL S131 is applicable with pressure and temperature sensors. The optical data processing unit must be mounted out of the high tension field. He contains 2 independent data receivers. Each receiver has an analog current output 4mA to 20mA and a fault indication output.

Input frequency:	Battery	I-Output	Fault Output
400Hz to 2000Hz:	OK	4-20mA	HIGH
400Hz to 2000Hz:	Low	4-20mA	LOW
< 363Hz:	--	<=3.2mA	LOW

At a frequency >2000Hz up to 5000Hz the output current residual at 20mA.

At a frequency >5000Hz the output current will be less the 3.5mA and the fault indication output switches to LOW.

At frequencies from 363Hz to 400Hz the output current is 3.63mA to 4mA. (negative pressure)

At a frequency <363Hz the output current will be less then 3.2mA and the fault indication output switches to LOW.

Current outputs 4-20mA

PNP type outputs. The load must be connected from the output to 0V and must be <= 500Ω.

Fault indication outputs

Push-pull type outputs. Maximum load 20mA. Connectable at +24VDC or 0V.

Mounting the POF

For mounting the POF a quick connector type Q-FSMA-KT (Phoenix No.: 1885994) will be required. (Not included in the package). POF specifications: Core diameter: 1mm, Cladding diameter: 2.2mm. Fix the connector Q-FSMA KT at the data processing unit ODA-4/20A-LWL. Cut the

POF with the special cutter carefully and push them through the quick connector inside the optical receiver set. Rigid fasten the locking nut at the quick connector. The applicable length of the POF is dependent of there type and structure. The functional safety of the data receiver is given by the working up of the optical fibres. Specially near the sensor, the fibre optics must not be buckled or laid with a small radius. Buckled or bad laid fibre optics results to a strong decrease of performance. Avoid performance decreasing and failures caused by wear, by a functional mounting of the fibre optics.

Maintenance

Protect the fibre optic adaptor at the data receiver and the optical fibres against pollution. Please set up the protection caps if no optical fibres are connected. If the fibre optic adapter is contaminated, clean with alcohol. Do not use aggressive solvents. Plastic optical fibres can be destroyed by strong solvents. Equipment must only be repaired by the manufacturer.

Safety Informations

The data receiver ODA-4/20A-LWL S131 must not be used for Accident-Prevention! When installing and operating with the sensor, it is necessary to take into consideration the relevant international and other national regulations.

Standards met:

EN 61000-4-4, EN 61000-4-6, EN 60529, EN 60950. Machine directive: 2006/42EC. EMC: 2004/108/EC. RoHS: 2011/65/EU.

General Notes, disposal

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

EC-Declaration of Conformity

The conformity of the devices with the EC standards and directives and the observation of the Quality Safety System ISO 9001:2008, declares:

Hans Bracher, Matrix Elektronik AG

ODA-4-20-LWL_S131_e13/2013-11-14/HB

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